



# NASA Human Factors

# Dirty Dozen



The NASA Human Factors Dirty Dozen shows the 12 most commonly seen Human Factors in 2019.

<b>1 DECISION-MAKING</b> We make decisions all the time, and when those decisions don't go as taught or intended, they can result in an unsafe situation (e.g., ignored caution or warning, inadequate risk assessment).	<b>2 COMMUNICATION</b> Communication breakdowns are involved in most all mishaps. (e.g., inadequate briefing, risk assessment, miscommunication, failure to communicate critical information).	<b>3 TECHNICAL ENVIRONMENT</b> We rely a great deal on our technological tools, and when these fail to perform or underperform, it creates risks to manage (e.g., communication equipment, warning system, switches and controls).	<b>4 INADEQUATE SUPERVISION</b> Supervisors who don't provide enough guidance and mentoring put their subordinates at greater risk (e.g., modeling, lack of feedback, training).
<b>5 PSYCHOLOGICAL CONDITION</b> Mental states affect our interactions in ways that impact successful work operations (e.g., emotional state, personality, peer pressure, mental fatigue, motivation).	<b>6 ORGANIZATIONAL OPERATIONS</b> Policies, processes and procedures are applied to how our organization conducts business (e.g., design reviews, flight readiness reviews, NPRs, audits).	<b>7 ORGANIZATIONAL RESOURCES</b> Our organization provides tools to conduct business successfully (e.g., staffing, budget, equipment, facilities, technology, data systems).	<b>8 SKILL-BASED</b> We perform taught patterns of behavior easily and unconsciously over time, and when those patterns break down due to misuse or distraction, it creates unsafe situations (e.g., procedural error, careless operation).
<b>9 VIOLATION</b> Routine violations are sanctioned by the organization when coworkers, supervisors, managers or leaders "look away" (e.g., driving over speed limit). Extreme violations are when one deliberately engages in behavior and knowingly violates rules (e.g., flying inverted).	<b>10 SUPERVISION PLANNED INAPPROPRIATE OPERATION</b> Supervisors who plan inappropriate work (but not a violation) put their colleagues and mission at greater risk (e.g., team or crew composition, pushing operational tempo).	<b>11 SUPERVISORY VIOLATION</b> Supervisory violations create dangerous conditions. The mission impact is greater because it affects more people in the organization. (e.g., lack of enforcement of rules and regulations, directed prohibited activities, authorization of unqualified people to perform work).	<b>12 ORGANIZATIONAL CULTURE/CLIMATE</b> This is the working atmosphere within our organization (e.g., culture, climate, morale).

The Dirty Dozen highlights the most frequently observed human-related issues discovered during Fiscal Year 2019 agency mishap and close-call investigations. Throughout the year, these issues contributed to more than \$3,228,152 in damage costs and at least 546 workdays of lost time.

Brought to you by the Office of Safety and Mission Assurance Human Factors Program.